



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/719,839 03/14/01 JOUVE

I 022701-907

021839 HM12/0918
BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA VA 22313-1404

EXAMINER

MOON, M

ART UNIT

PAPER NUMBER

1623
DATE MAILED:

09/18/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/719,839

Applicant(s)

JOUVE ET AL.

Examiner

M.P. Moon

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. The meaning of the verbs, "carry", "carries", and "being carried" (pages 3-4) is unclear within the context of the specification. Appropriate correction here and at any other occurrence not noted herein is required.
 - b. The phrase "carrier compounds" (pages 6-7) is vague and indefinite. There appears to be no structure or unifying class of compounds which clearly defines what "carrier compounds" are. Appropriate correction here and at any other occurrence not noted herein is required.
 - c. The definition (page 15) of Yield (RR) may not be written as intended. Should "guaiacol introduced" be in the denominator? Examiner requests that Applicant review this definition and correct if it is appropriate.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Markush claim does not refer to the group members in the alternative.

Art Unit: 1623

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This claim refers to a "carrier compound". What does applicant intend by the phrase "carrier compound"? For examining purposes the Examiner has assumed that this phrase is not critical to the understanding of the claim.

5. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "in the region of" in Claim 17 is a relative term which renders the claim indefinite. The term "in the region of" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481

Art Unit: 1623

(Bd. App. 1949). In the present instance, Claim 17 recites the broad recitation "in the region of", and the claim also recites "equal to" which is the narrower statement of the range/limitation.

6. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites the limitation "said acids" in the claim and the compounds preceding the recitation are aldehydes. There is insufficient antecedent basis for this limitation within the claim. It is unclear what Applicant intended by this claim. For examining purpose, Examiner has assumed that Applicant intend to claim the process of Claim 27 further comprising an oxidation of the mandelic acids described therein to 4-hydroxybenzaldehyde or vanillin.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 2-6, 13-16, 18-23, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoefnagel et al (WO 94/14746).

Hoefnagel et al exemplifies (Example 3, page 13) the zinc oxalate catalyzed reaction of phenol, glyoxylic acid, and potassium hydroxide in water at reflux. Hoefnagel et al obtains 4-hydroxymandelic acid (64.9%). Hoefnagel et al exemplifies (Example 4, pages 13-14) related

Art Unit: 1623

reactions wherein zinc acetate is used as a catalyst. One skilled in the art would expect that oxalic acid would be formed from the glyoxylic acid in aqueous base via Cannizzaro's reaction. Therefore, there would be oxalic acid generated in situ during the reaction process of Hoefnagel et al.

9. Claims 2-6, 13, 15-24, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Schouteeten et al (US 4,339,602).

Schouteeten et al exemplifies (Example 1, column 3) the reaction of guaiacol, glyoxylic acid, and sodium hydroxide in water at 35-85°C and obtains 4-hydroxy-3-methoxymandelic acid (66%). Schouteeten et al also exemplifies (Examples 2, 4, 5, and 10, columns 3-7) related reactions of phenols including guetol (2-ethoxyphenol), o-cresol, 2-tert-butylphenol, and 3-ethylphenol. Schouteeten et al does not specifically claim catalysis by oxalic acid. However, Schouteeten et al discloses (column 1 lines 21-24) that oxalic acid is generated in situ via the Cannizzaro's reaction of glyoxylic acid in aqueous base. Therefore, it is inherent that oxalic acid is present during the processes of Schouteeten et al.

10. Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Schouteeten et al (US 4,339,602). Schouteeten et al exemplifies (Examples 1-5, columns 3-5) p-hydroxymandelic compounds and discloses melting point and NMR spectral data for each of them.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoefnagel et al (WO 94/14746) as applied to Claims 27 and 6 above, and further in view of Sychev (Chem. Abst. 117:191094).

Sychev discloses dicarboxylic acids and substituted benzoic acids as acylation catalysts. Sychev also discloses that aliphatic dicarboxylic acids have higher catalytic than the other acids tested.

Hoefnagel et al and Sychev are analogous art because they are from the same field of endeavor, namely the reaction and preparation of carboxylic acid derivatives. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use other dicarboxylic acid catalysts as described by Sychev in the process exemplified by Hoefnagel et al with oxalate catalyst to prepare mandelic acid derivatives. The motivation for doing so would have been to optimize reaction conditions for the process of preparing valuable intermediates for the food industry. One of ordinary skill in the art at the time of invention would have had an expectation of success due to the improved catalytic activity of aliphatic dicarboxylic acids disclosed by Sychev.

Therefore it would have been obvious to combine Sychev with Hoefnagel et al to obtain the invention as specified in Claims 7-12.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoefnagel et al (WO 94/14746) or Schouteeten et al (US 4,339,602) as applied to Claims 27 above, and further in view of Umemura et al (US 4,165,341).

Umemura et al exemplifies (Example 11, column 6) the copper (II) oxide oxidation of 4-hydroxy-3-methoxymandelic acid to 4-hydroxy-3-methoxybenzaldehyde (92.1%).

Hoefnagel et al, Schouteeten et al, and Umemura et al are analogous art because they are from the same field of endeavor, namely preparation and reactions of mandelic acid derivatives.

Art Unit: 1623

At the time of invention, it would have been obvious to a person of ordinary skill in the art to add the oxidation step of Umemura et al to the mandelic acid synthesis processes of Hoefnagel et al or Schouteeten et al in order to prepare the corresponding benzaldehydes. The motivation for doing so would have been to prepare vanillin analogs for use in the food industry. One of ordinary skill in the art at the time of invention would have had an expectation of success due to expressed teachings of Hoefnagel et al, Schouteeten et al, and Umemura et al.

Therefore it would have been obvious to combine Umemura et al with either of Hoefnagel et al or Schouteeten et al to obtain the invention as specified in Claim 26.

Contact Information

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M.P. Moon whose telephone number is 703-306-5815. The examiner can normally be reached on weekdays between 9:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Geist can be reached on 703-308-1701. The fax phone number for the organization where this application or proceeding is assigned is 703-308-4556 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0198.

MPM

MPM
September 15, 2001



GARY GEIST
SUPERVISORY PATENT EXAMINER
TECH CENTER 1600